Remarks/Arguments:

The present invention relates to a video broadcast receiving apparatus for receiving time division multiplex programs. Specifically, the operation start point of a radio frequency variable gain circuit is set to a low power level and the operation start point of a base band variable gain circuit is set to a high power when both an electric field strength and measured errors are above predetermined thresholds. Varying of the operation start points does not occur when the system is receiving a selected program.

On page 2, the Official Action rejects claim 1 under 35 U.S.C. § 103(a) as being unpatentable by Mostov (U.S. Patent No. 6,965,655). It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Mostov features a system that optimizes performance in a radio receiver in the presence of interference. Specifically, Mostov features varying gain of a radio frequency and intermediate frequency variable gain circuit.

Applicants' invention, as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

> **...a radio frequency variable gain circuit having a radio frequency operation starting point...**
>
> **...a baseband variable gain circuit having a baseband operation starting point...**
>
> **... an operation starting point controlling circuit that varies: ...**
>
> **a) the radio frequency operation start point to start operation from low radio frequency power level which is lower than a high radio frequency power level used when detecting the electric field strength and measuring the errors, and**
>
> **b) the base band operation starting point to start operation from a high base band power level which is**

higher than a low base band power level used when detecting the electric field strength and measuring the errors,

wherein while receiving the plurality of time division multiplex programs other than the selected program, the radio frequency operation start point and the baseband operation starting point are varied in accordance with a) and b)...

Claim 1 relates to a receiver with two variable gain circuits. Specifically, the receiver has a radio frequency variable gain circuit which amplifies the radio frequency signal and a **base band variable gain circuit** which amplifies the base band signal. When the detected electrical field strength and the number of measured errors are both above predetermined thresholds, then the operation starting point controlling circuit controls the radio frequency variable gain circuit and the base band frequency variable gain circuit to adjust the power level in an opposite manner. For example, the radio frequency variable gain circuit power level is lowered whereas the base band operating start point power level is increased. Furthermore, the operation starting point controlling circuit varies the power level when the received programs are programs **other than the selected program**. This feature is found in Figs. 1 and 4 and also on page 9, lines 4-22, of the specification. No new matter has been added.

In Fig. 4, Mostov teaches a receiver circuit with a radio frequency variable gain circuit 56 and an intermediate mixer variable gain circuit 62. Specifically, the variable gain circuits 56 and 62 in Fig. 4 of Mostov are controlled by controller 72. Variable gain circuit 56 and 62 are controlled in one of four possible gain states (00, 01, 10 and 11). These four gain states are described in table 1 of Mostov. In Column 15, lines 25-35, Mostov suggests that the gain of the circuits is lowered when the received signal strength is high but the quality in terms of errors is low. Thus, Mostov decreases the gains in variable gain circuits 56 and 62 to better protect against an interfering wave. Mostov, however, **does not teach a base band variable gain circuit**. Mostov only teaches a radio frequency variable gain circuit 56 and intermediate frequency variable gain circuit 62 (radio frequency and intermediate frequency are not baseband frequency, they are both higher in frequency than baseband). Furthermore, Mostov does not suggest adjusting the variable gain circuits at a particular time. More specifically,

Mostov does not suggest adjusting the variable gain circuit when programs other than a selected program is being received.

Applicants' claim 1 is different than Mostov, because a radio frequency and base band variable gain circuit are controlled to have power levels opposite of one another in order to maintain a constant signal level as recited in the bolded portion of claim 1 recited above. In Figs. 1 and 4, Applicants teach a radio frequency variable gain circuit 110 and base band variable gain circuits 117 and 118. When a program other than a selected program is being received, and the detector electric field strength and number of errors are above predetermined thresholds, then the variable gain circuits are controlled accordingly. Specifically, radio frequency variable gain circuit 110 is controlled to start from a power level which is lower than the power level used when it was detecting the electric field strength. Also, the base band variable gain circuits 117 and 118 are controlled to start from a power level which is higher than the power level used when detecting electric fuel strength and errors.

The radio frequency variable gain circuit 110 and base band variable gain circuits 117 and 118 are controlled in this opposite manner to ensure that the input levels are of AD converters 121 and 142 remain constant. Thus, the radio frequency variable gain circuit 110 and base band variable gain circuits 117 and 118 have an inverse gain operation. This feature is supported on page 9, lines 4-22, of the specification ("*setting an operation start points so as to start operation from weak power, for example, allows a gain of RF variable gain amplifier 110 to be small. Operation starting point controlling signal 129 thus adds a DC offset enlarging a gain of base band variable gain amplifiers 117 and 188 in BBAGC controlling portion 131. As a result, a rate of a gain control amount can be changed while input levels of AD converters 121 and 122 are kept to be constant.*"). Thus, Applicants teach a radio frequency and **baseband** variable gain circuit (Mostov does not suggest a baseband variable gain circuit).

It is because Applicants include the feature of *a radio frequency variable gain circuit and a baseband variable gain circuit* as claimed that the following advantages are achieved. An advantage is the ability to attenuate the effects of an interference wave while maintaining a constant signal level to the baseband analog to digital converters. Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Claim 2 includes all the features of claim 1 from which it depends. Thus, claim 2 is also patentable over the are of record for the reasons set forth above.

Applicants' invention as recited by new claim 9 also includes a feature which is neither disclosed nor suggested by the art of record, namely:

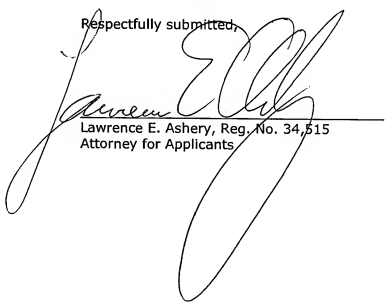
> **... wherein the radio frequency operation start point and the base band operation start point are varied to ensure that the input signal to the analog to digital converter maintains a constant level.**

Newly added claim 9 relates to the control of the radio frequency and baseband variable gain circuits in order to maintain constant levels through the analog to digital converters. The analog to digital converters are shown as elements 121 and 122 in Fig. 4. Therefore, if radio frequency variable gain circuit 110 attenuates the signal, then baseband variable gain circuits 117 and 118 amplify that signal back to maintain a constant amplitude level. This feature is found in the originally filed application on page 9, lines 10-15. No new matter has been added.

Claim 9 includes all the features of claim 1 from which it depends. Thus, claim 9 is also patentable over the art of record for the reasons set forth above.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



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